

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strike through~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claim 2 in accordance with the following:

1. (ORIGINAL) A separator of a fuel cell, the separator comprising a solid-state, amorphous alloy.
2. (CURRENTLY AMENDED) The separator of claim 1, which has a corrosion rate of ~~approximately~~ less than or equal to $20 \mu\text{A}/\text{cm}^2$ in a hydrogen-saturated solution having a temperature of 130°C and a pH of 3.
3. (ORIGINAL) The separator of claim 1, wherein the solid-state, amorphous alloy has a fracture toughness of greater than or equal to $5 (\text{ksi})\text{-(in}^{1/2})$.
4. (ORIGINAL) The separator of claim 1, wherein the solid-state, amorphous alloy has an elastic limit greater than or equal to 1% .
5. (ORIGINAL) The separator of claim 1, wherein the solid-state, amorphous alloy has a composition represented by the formula, $(\text{Zr, Ga})_a(\text{Ti, P, W})_b(\text{V, Nb, Cr, Hf, Mo, C})_c(\text{Ni})_d(\text{Cu})_e(\text{Fe, Co, Mn, Ru, Ag, Pd})_f(\text{Be, Si, B})_g(\text{Al})_h$, where $a+b+c$ is 15 to 75 atomic%, $d+e+f$ is 5 to 75 atomic%, and $g+h$ is 0 to 50 atomic%, provided that $a+b+c+d+e+f+g+h$ is 100 atomic%.
6. (WITHDRAWN) The separator of claim 5, wherein the solid-state, amorphous alloy has a composition of $\text{Zr}_{41}\text{Ti}_{14}\text{Ni}_{10}\text{Cu}_{12.5}\text{Be}_{22.5}$.
7. (ORIGINAL) The separator of claim 5, wherein the solid-state, amorphous alloy has a composition of one of: $\text{Fe}_{72}\text{Al}_5\text{Ga}_2\text{P}_{11}\text{C}_6\text{B}_4$ and $\text{Fe}_{72}\text{Al}_7\text{Zr}_{10}\text{Mo}_5\text{W}_2\text{B}_{15}$.

8. (ORIGINAL) A fuel cell, comprising:
an anode;
a cathode;
an electrolyte membrane disposed between the anode and the cathode, being on a first side of the anode and the cathode; and
at least one separator proximate to one of: the anode and the cathode, the separator being disposed on a side of the anode/cathode opposite to the electrolyte membrane, and comprising a solid-state, amorphous alloy.

9. (ORIGINAL) The fuel cell of claim 8, wherein the at least one separator has a corrosion rate less than or equal to $20 \mu\text{A}/\text{cm}^2$ in a hydrogen-saturated solution having a temperature of 130°C and a pH of 3.

10. (ORIGINAL) The fuel cell of claim 8, wherein the solid-state amorphous alloy has a fracture toughness of greater than or equal to $5 (\text{ksi})\text{-(in}^{1/2})$.

11. (ORIGINAL) The fuel cell of claim 8, wherein the solid-state, amorphous alloy has an elastic limit greater than or equal to 1%.

12. (ORIGINAL) The fuel cell of claim 8, wherein the solid-state, amorphous alloy has a composition represented by the formula, $(\text{Zr, Ga})_a(\text{Ti, P, W})_b(\text{V, Nb, Cr, Hf, Mo, C})_c(\text{Ni})_d(\text{Cu})_e(\text{Fe, Co, Mn, Ru, Ag, Pd})_f(\text{Be, Si, B})_g(\text{Al})_h$, where $a+b+c$ is 15 to 75 atomic%, $d+e+f$ is 5 to 75 atomic%, and $g+h$ is 0 to 50 atomic%, provided that $a+b+c+d+e+f+g+h$ is 100 atomic%.

13. (WITHDRAWN) The fuel cell of claim 12, wherein the solid-state, amorphous alloy has a composition of $\text{Zr}_{41}\text{Ti}_{14}\text{Ni}_{10}\text{Cu}_{12.5}\text{Be}_{22.5}$.

14. (ORIGINAL) The fuel cell of claim 12, wherein the amorphous alloy has a composition of one of: $\text{Fe}_{72}\text{Al}_5\text{Ga}_2\text{P}_{11}\text{C}_6\text{B}_4$ and $\text{Fe}_{72}\text{Al}_7\text{Zr}_{10}\text{Mo}_5\text{W}_2\text{B}_{15}$.

15. (WITHDRAWN) A method of manufacturing a separator of a fuel cell, the separator comprising a solid-state, amorphous alloy, the method comprising:

preparing a melt to transform the solid-state, amorphous alloy;
feeding the melt into a mold provided with a mold cavity having a shape
corresponding to the separator; and
cooling the melt in the mold cavity at a cooling rate higher than a critical cooling
rate to transform the melt into an amorphous phase.

16. (WITHDRAWN) The method of claim 15, wherein the solid-state, amorphous alloy has a corrosion rate less than or equal to $20 \mu\text{A}/\text{cm}^2$ in a hydrogen-saturated solution having a temperature of 130°C and a pH of 3.

17. (WITHDRAWN) The method of claim 15, wherein the solid-state, amorphous alloy has a fracture toughness greater than or equal to $5 (\text{ksi})\text{-(in}^{1/2})$.

18. (WITHDRAWN) The method of claim 15, wherein the solid-state, amorphous alloy has an elastic limit greater than or equal to 1%.

19. (WITHDRAWN) The method of claim 15, wherein the solid-state, amorphous alloy has a composition represented by the formula, $(\text{Zr, Ga})_a(\text{Ti, P, W})_b(\text{V, Nb, Cr, Hf, Mo, C})_c(\text{Ni})_d(\text{Cu})_e(\text{Fe, Co, Mn, Ru, Ag, Pd})_f(\text{Be, Si, B})_g(\text{Al})_h$, where $a+b+c$ is 15 to 75 atomic%, $d+e+f$ is 5 to 75 atomic%, and $g+h$ is 0 to 50 atomic%, provided that $a+b+c+d+e+f+g+h$ is 100 atomic%.

20. (WITHDRAWN) The method of claim 19, wherein the solid-state, amorphous alloy has a composition of one of: $\text{Zr}_{41}\text{Ti}_{14}\text{Ni}_{10}\text{Cu}_{12.5}\text{Be}_{22.5}$, $\text{Fe}_{72}\text{Al}_5\text{Ga}_2\text{P}_{11}\text{C}_6\text{B}_4$ and $\text{Fe}_{72}\text{Al}_7\text{Zr}_{10}\text{Mo}_5\text{W}_2\text{B}_{15}$.